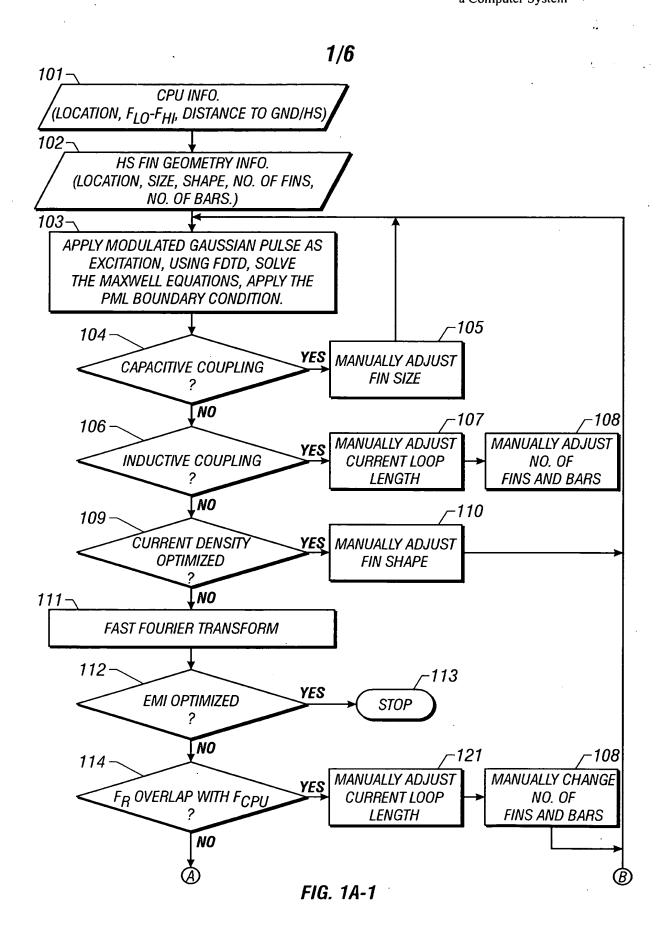
Attorney Docket No.: M-9699 US
First Inventor: The Property of Radiation Emitted by
a Computer System



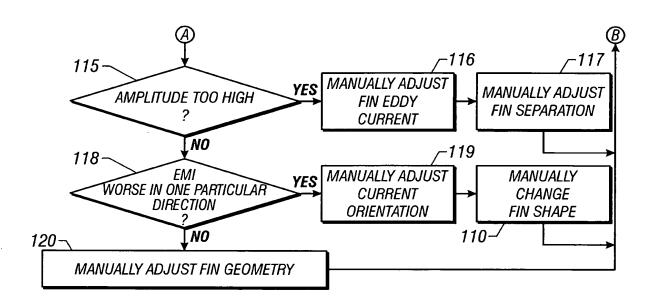
Attorney Docket No.: M-9699 US

First Inventor: Lan Zhang

Title: Calculation of Radiation Emitted by

a Computer System

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HS =HEATSINK -Fu =FREQUENC

 F_{LO} - $F_{H\underline{I}}$ = FREQUENCY WINDOW RANGE

F, =RESONANCE FREQUENCY OF THE HEATSINK

PML = PERFECT MATCHED LAYER

FDTD = FINITE DIFFERENCE IN TIME DOMAIN

GND = GROUND

FFT = FAST FOURIER TRANSFORM

FIG. 1A-2

101-

102-

103-

CPU INFO. (LOCATION, F_{LO}-F_{HI}, DISTANCE TO GND/HS)

HS FIN GEOMETRY INFO. (LOCATION, SIZE, SHAPE, NO. OF FINS, NO. OF BARS.)

APPLY MODULATED GAUSSIAN PULSE AS

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EXCITATION, USING FDTD, SOLVE THE MAXWELL EQUATIONS, APPLY THE PML BOUNDARY CONDITION. 111 FAST FOURIER TRANSFORM 112-YES EMI ACCEPTABLE NO 114-MANUALLY ADJUST YES FR OVERLAP WITH FCPU NO 115-MANUALLY ADJUST YES AMPLITUDE TOO HIGH **CURRENT** -119 117-NO 118-WORSE IN ONE PARTICULAR MANUALLY ADJUST MANUALLY **CURRENT CHANGE DIRECTION** ORIENTATION FIN SHAPE 110-NO 120 -MANUALLY ADJUST FIN GEOMETRY HS = HEATSINK F_{LO} - $F_{HI} = FREQUENCY WINDOW RANGE$ F, =RESONANCE FREQUENCY OF THE HEATSINK FIG. 1B PML =PERFECT MATCHED LAYER FDTD =FINITE DIFFERENCE IN TIME DOMAIN GND = GROUNDFFT = FAST FOURIER TRANSFORM

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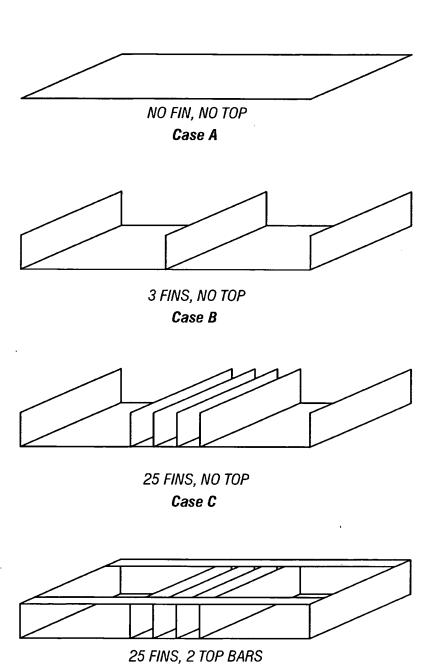


FIG. 2

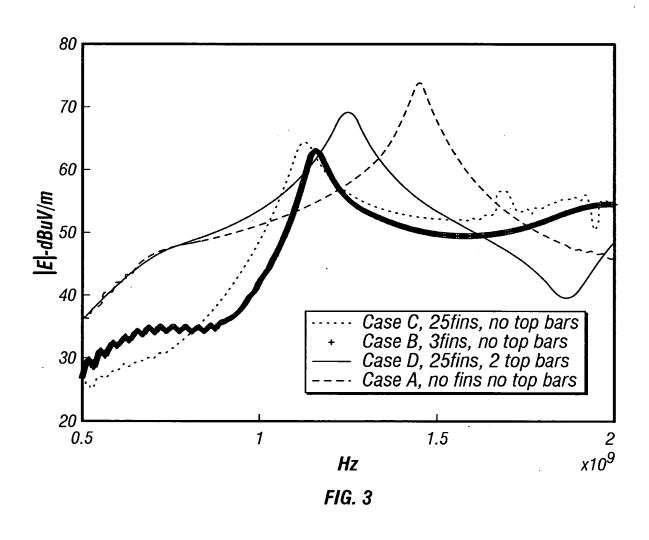
Case D

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